

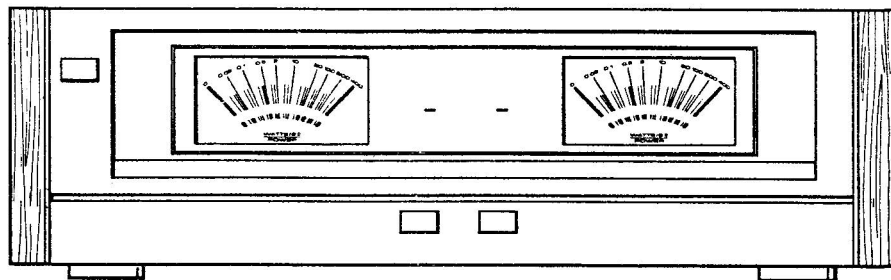
Lenco

AF 3310

SERVICE
MANUAL

LA-1500M

STEREO MAIN AMPLIFIER



SPECIFICATIONS

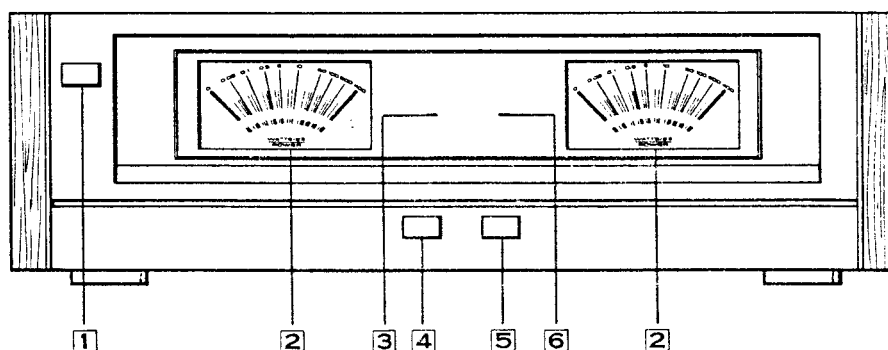
Amplifier Section.

Continuous average power output
(both channel driven)
 into 8 Ohms (from 20Hz to 20kHz) 180W
 into 8 Ohms (from 1kHz) 200W
 Total Harmonic Distortion
 into 8 Ohms (from 20Hz to 20kHz) 0.08%
 Signal to Noise Ratio (IHF "A" Network) 120dB
 Input (Sensitivity/Impedance) 1V/56K Ω
 Frequency Response
 6Hz to 110kHz-3dB
 Power "ON" Muting Time. 5 Sec

Miscellaneous.

Power requirements AC220V, 50Hz
 Power Consumption 620W
 Dimension 420(W) x 130(H) x 380(D)mm

FRONT PANEL FEATURES



1. POWER SWITCH

Depress the switch to supply power to the amplifier.

2. OUTPUT LEVEL METER

The output power level meters give a visual indication of audio power being delivered to each speaker.

3, 6. PROTECTION CIRCUIT OPERATION INDICATOR LAMP

The red LED indicates when the protection circuit is activated and the green LED indicates when the protection circuit is off.

The protection circuit activates for a 5—7 second period when the unit is powered ON and whenever the unit overheats beyond a specific temperature.

4. SPEAKER "A" SELECTOR SWITCH

Depress button to listen to the speaker systems connected to the speaker A terminals.

(ON) — Depressed position; The sound is heard from speaker systems.

(OFF) — Released position; The sound is not heard from speaker systems.

5. SPEAKER "B" SELECTOR SWITCH

Depress button to listen to the speaker systems connected to the speaker B terminals.

(ON) — Depressed position; The sound is heard from speaker systems.

(OFF) — Released position; The sound is not heard from speaker systems.

PARTS LIST EXTERIOR.

NO	PARTS NAME	PARTS NO	Q'TY
1	PANEL, FRONT	311530101	1
2	PLATE, DECORATION	311471701	2
3	SCREEN, WINDOW	311471401	1
4	SCREEN, SUB	311471201	1
5	ESCUTCHEN, PANEL	311470201	1
6	KNOB, POWER	364030101	3
7	ASS'Y METER PANEL	311472501	2
8	STAY, PANEL	311470901	1
9	FRAME, SIDE	311470801	2
10	REFLECTOR	311112701	1
11	NUT	711203009	8
12	PLATE, BOTTOM	311111402	1
13	FOOT ASS'Y	311481001	4
14	SOCKET, FUSE HOLDER	299911201	1
15	BUSHING, STRAIN R	820111601	1
16	CORD, POWER	221112503	1
17	TERMINAL, PUSH	211570402	2
18	IC	244203072	2
19	CHASSIS, REAR	311530201	1
20	HEAT SINK(A)	311472401	1
21	HEAT SINK	311470401	2
22	PCB UNIT ASS'Y	A17018401	1
23	RIVET ASS'Y PLASTIC	341321001	2
24	S/W POWER	220219501	1
25	JOINT	311113001	2
26	BOARD, SIDE(R)	311471101	1
27	CASE, BONNET	311470701	1
28	TRANS, POWER	213125901	1
29	BOARD, SIDE(L)	311471001	1
30	SCREW	776441002	3
31	SCREW	747340602	2
32	SCREW	781440801	4
33	SCREW	744843001	4
34	SCREW	734641001	4
35	SCREW	734441002	11
36	SCREW	776440801	4
37	SCREW	776441002	14
38	SCREW	776440801	5
39	SCREW	776441201	6
40	SCREW	776442002	4
41	SCREW	775440602	14
42	SHEET, SIDE	311472701	2
43	LAMP, PILOT	214610302	3
44	CAP(B), LAMP	321180401	3

ELECTRICAL PARTS LIST

Notes: When ordering parts, first convert Resistance value into Code from as shown in the following examples.

RESISTORS:

1114 □□□ 25 Carbon Film Resistor, $\pm 5\%$, 1/4W, Tapping

ex) Resistor Value

4.7	.....	479	56	.....	560	680	.....	681
8.2K	.....	822	12K	.....	123	220K	.....	224

ELECTROLYTIC CAP.:

142 □□□ 65 Electrolytic Capacitor, $\pm 20\%$, Tapping

ex) Working Voltage

16V	.....	3	25V	.....	4	35V	.....	5
50V	.....	6	63V	.....	7	6.3V	.....	1

CERAMIC CAP.:

1886 □□□ 41 Ceramic Capacitor, SL, $\pm 5\%$, Non-Tapping.

ex) CKD YB 716 CKD YF ... 756 CCD CH 806
CCD SL 886 CCD RH ... 846 CCD TH 866

Capacitor Value

4PF	.....	040	47PF	.....	470	220PF	.....	221
1800PF	...	182	0.01 μ F	.....	103	0.047 μ F	.....	473

Tolerance

C = ± 0.25 pF	...	0	D = ± 0.5 pF	...	1	F = ± 1 pF	...	2
J = $\pm 5\%$	.....	4	K = $\pm 10\%$	.....	5	Z = +80	.....	9
						-20	.....	

MYLAR CAP.:

1506 □□□ 51 Mylar Capacitor, Standard, $\pm 10\%$, Non-Tapping

ex) Capacitor Value

0.0015 μ F		152	0.027 μ F	...	273	0.1 μ F	...	104
----------------	-------	-----	---------------	-----	-----	-------------	-----	-----

Tolerance

J = $\pm 5\%$	...	4	K = $\pm 10\%$	...	5
---------------	-----	---	----------------	-----	---

STYROL CAP.:

1536 □□□ 41 Styrol Capacitor, $\pm 5\%$, Non-Tapping

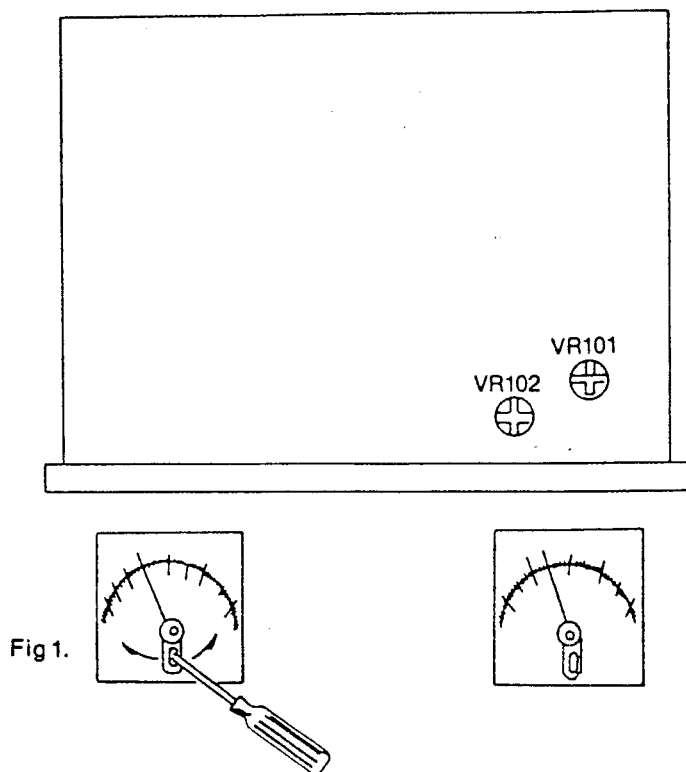
ex) Capacitor Value

430 pF		431	1800pF	...	182
--------	-------	-----	--------	-----	-----

REF. NO.	PARTS NO.	DESCRIPTION
IC101, IC102	244203072	STK4050V
IC103	244210375	TA7317P
IC104	244211875	TA7318P
Q101	240216521	KTC-2238-Y, PA
Q102	240010721	KTA949-0
Q201, Q202, Q203	240211811	KTC2240-GR
Q204, Q301, Q302		
Q303	240011411	KTA970-GR
D101	241355991	KBPC 25-02, 25A
D501, D502	241016995	1SS131
D201, D301, D401	241315111	IN4002
D101, D102, D103	242124031	IN970 B, 400, 24V
D104		
D201	242115031	IN965B, 400, 15V
D601, D602	242110031	1N758A, 400, 10V
D202	241902101	KLG114E (GREEN)
D203	241912101	KLR114E (RED)
TRANS, POWER	213125903	
CODE, POWER	221112503	KKP-4819D
BUSHING, STRAIN	820111601	HEYCO, SR, 6N-4,
C801	199810401	NCG-002-0
CARRIER	299911301	FEK031
(FUSE HOLDER)		
SOCKET	299911201	
(FUSE HOLDER)		
P01, P02	250512001	NCW-020
SW101	220219501	NSA-005 (POWER SWITCH)
SW201, SW202	220213661	S/W, PUSH
F10	218862001	FUSE (T4A, 250V)
F102	218861501	FUSE (F2A, 250V)
JACK, 2P PIN	215550201	NKB-002-0
RY101	214011701	RELAY VB-24MBU
L401, L402	212920701	COIL (ATH-054-0)
C101, C102	199111001	NCH-010-A, 10,000 μ F/80V
C305	142647861	CEA, 0.47 μ F/50V
C601, C602	142601061	CEA, 1 μ F/50V
C421, 422	142901061	CEA, 1 μ F/100V
C201, C413, C414	142910061	CEA, 10 μ F/100V
C425, C426		
C407, C408, C423	142910161	CEA, 100 μ F/100V
C424		
C202, C203	142322061	CEA 22 μ F/16V
C441	142622061	CEA, 22 μ F/50V
C303	142433061	CEA, 33 μ F/25V
C301, C403, C404	142647961	CEA, 4.7 μ F/50V
C302	142547061	CEA, 47 μ F/35V
C405, C406	142647061	CEA, 47 μ F/50V
C103, C104, C105	199810101	0.01 μ F/250V (NCG-001-A)
C106		
C7, C8	188622141	CCDSL221J, 50V, 5%
C11	188633141	CCDSL331J, 50V, 5%
C1, C2, C401	171647151	CKDYB. 471K, 50V, 5%
C402		
C417, C418	171610241	CKDYB. 102K, 50V, 5%
C9, C10	175610491	CKDYF 104Z, 50V
C409, C410	188F10011	CCDSL 10D, 500V
C411, C412, C415	188F10151	CCDSL101K, 500V
C416, C419, C420		
C3, C4, C5, C6	171F15251	CKDYB 152K, 500V
C304, C603, C604	150610341	Mylar Cap 103J, 50V, 5%
C427, C428, C429	150682341	Mylar Cap 823J, 50V, 5%
C430		

REF. NO.	PARTS NO.	DESCRIPTION
VR101, VR102	254150101	SEMI, F. RESISTOR 500
R417, R418, R419	139012401	WIRE WOUND RESISTOR
R420, R421, R422		0.22 Ω , 5W
R423, R424		
R205	11515321	CARBON F RESISTOR, 15K $\frac{1}{2}$ W
R425, R426, R427	113247923	M.O.R, 4.7 Ω , 2W
R428		
R601, R602	113233223	M.O.R, 3.3k Ω , 2W
R411, R412, R413	113110123	M.O.R, 100 Ω , 1W
R414		
R210	113156123	M.O.R, 560 Ω , 1W
R202	113122221	M.O.R, 2.2K Ω , 1W
R407, R408	113127323	M.O.R, 27K Ω , 1W

ADJUSTMENT

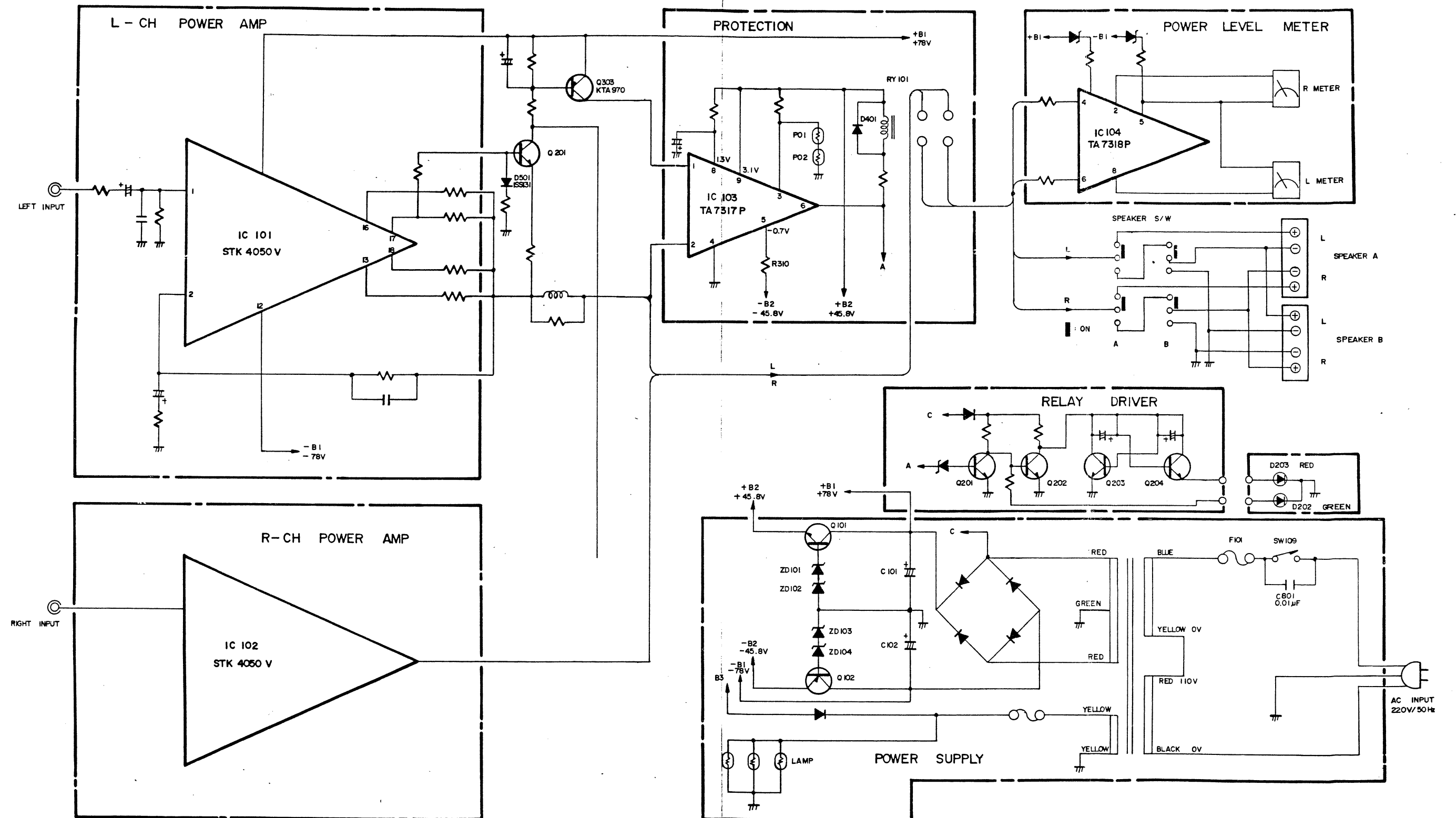


1. POWER METER ADJUSTMENT WITH POWER "OFF"
Remove the front panel and adjust the meter needle to "0" on the scale (Fig. 1)

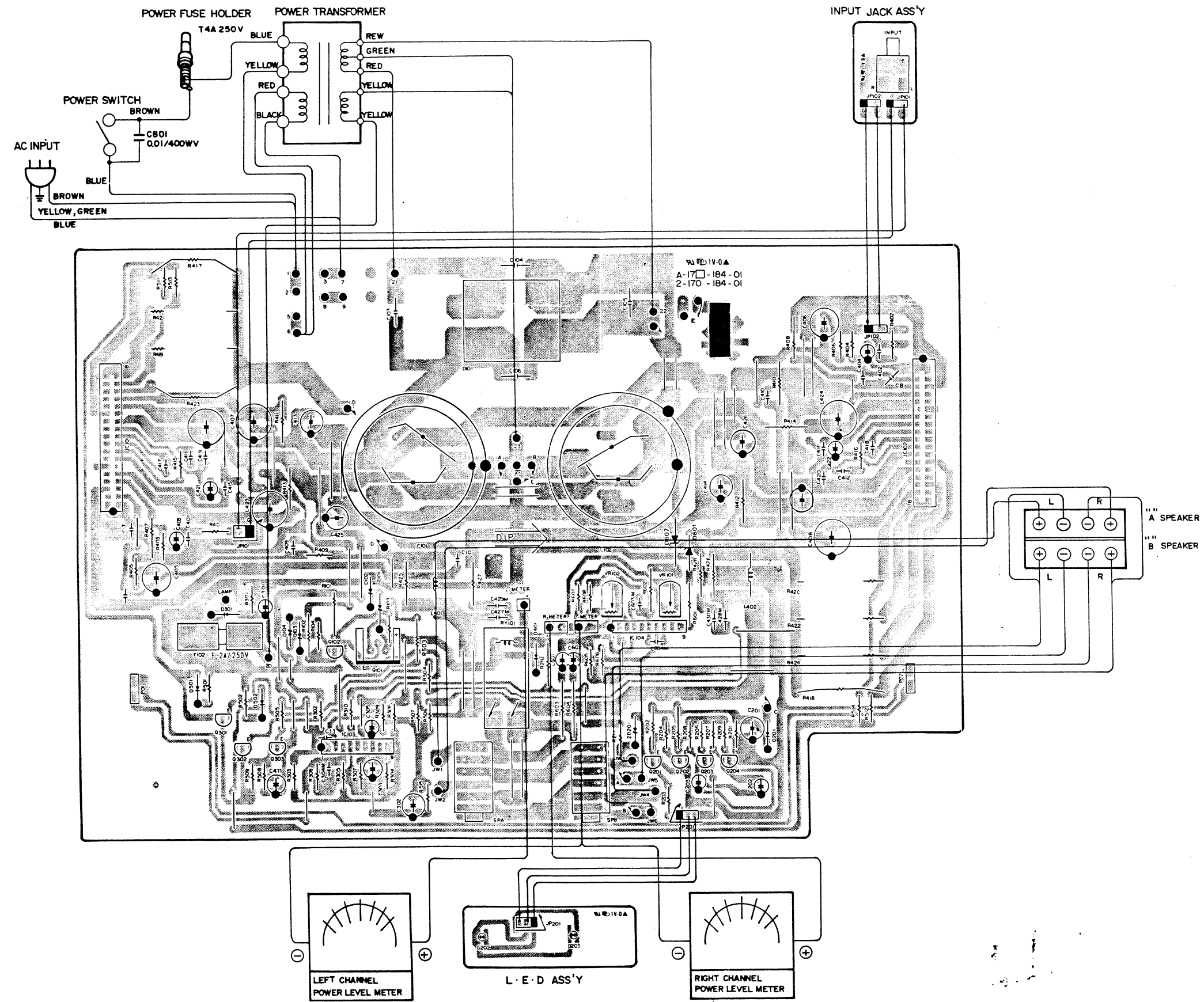
POWER METER ADJUSTMENT WITH POWER "ON"
Turn power on, feed a 1kHz, 1V RMS signal from a signal generator to the L channel input jack of the LA-1500M. With the speaker and 8 ohm dummy removed adjust VR102 till the meter needle points to "200W" on the scale.

3. R channel meter is adjusted by VR101 in the same manner as L channel.

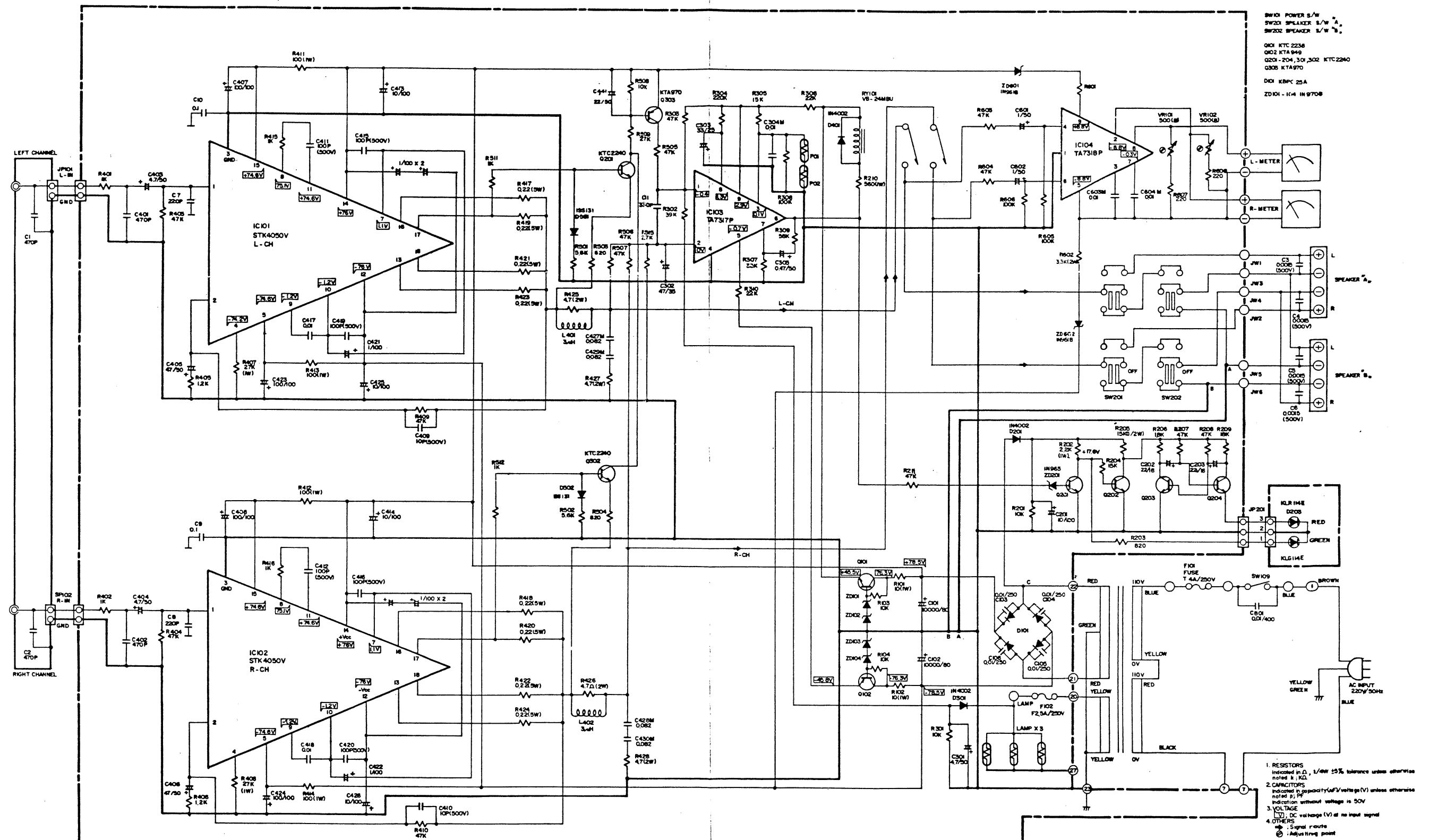
BLOCK DIAGRAM



WIRING DIAGRAM



SCHEMATIC DIAGRAM



EXPLODED VIEW

